

**Comparison of larvicidal and repellent efficacy of *Ocimum basilicum* (L.);
"Maduruthala", leaves and pods, against dengue vector, *Aedes aegypti* (L.)**

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Mosquitoes transmit serious human diseases, causing millions of deaths every year. Among the disease causing mosquitoes, *Aedes aegypti* is the major vector of dengue and dengue hemorrhagic fever. Repeated use of synthetic insecticides for mosquito control has caused adverse impacts on the natural biological systems and led to resurgence in mosquito populations. Therefore, concern is raised to search for alternative mosquito control measures. Plant derivatives are considered as a rich source of bioactive chemicals and they have gained importance as an alternative source of mosquito control agents. Present study was carried out as an effort to find effective and affordable way to control *A. aegypti* by assessing the larvicidal efficacy and repellent efficacy of essential oil of leaf and pod extracts of *O. basilicum* L. (Lamiaceae) which is an indigenous plant in Sri Lanka. The essential oils of leaf and pod extracts of *O. basilicum* were extracted by steam distillation and their major chemical composition was determined using gas chromatography and identified using relative retention times. Twenty late third instar larvae of *A. aegypti* were exposed to various concentrations (50-600 mg/L) of essential oils of leaf and pod extracts for 24 hours. LC₅₀ and LC₉₀ values of the essential oils of *O. basilicum* leaf and pod were determined after 24 hours by following the Probit analysis and repellent efficacy was determined using a Y-tube Olfactometer. The LC₅₀ and LC₉₀ values with 95 % confidence limit for essential oil of leaf extracts are 141.51 and 357.71 mg/L respectively while same values for pod extract are 127.33 and 377.18 mg/L respectively. Further it was observed that there is no significant difference between the larvicidal effects of essential oils of leaf and pod extracts against the third instar larvae of *A. aegypti*. Essential oil of leaf extract and pod extract have 92.6% and 93.33 % repellency at a concentration of 800 mg/L respectively. Results of the GC analysis revealed that eugenol and methyl eugenol were found to be the major chemical compounds in both of the essential oils. The results suggest a potential utilization of essential oils of leaf and pod extracts of *O. basilicum* as a larvicide and a repellent against *A. aegypti*, thus creating new affordable and effective approaches to the control of dengue fever.